

**Impressions of the West in the Early 'Seventies,
from the Diary of the Assistant Surgeon
of The B.N.A. Boundary Survey,
Dr. Thomas Millman.**

Read before The Women's Canadian Historical Society of Toronto,
by Mrs. T. Millman, at their October meeting, 1925.

PREFATORY NOTE

The long boundary line between Canada and the United States was for many years a matter of little interest to either country.

In the Treaty of 1803 between England and the United States it was agreed that the Boundary Line should be "The shortest line which can be drawn between the North-West point of the Lake of the Woods and the nearest source of the Mississippi". In 1857-1861 the Boundary Line west of the Rocky Mountains to the Pacific was marked out by a Commission whose final report was accepted by both countries; but, when later on, interest was again aroused in the matter, the report was missing; some years later a single copy was found at Greenwich Observatory by Otto Klotz.

During the sixties, however, both countries began to fill with settlers, not always of the best class and in the interests of law and order it was necessary to know in which country land was taken up or squatted upon; and under whose jurisdiction a crime was committed; also owing to the Indian wars to the South and the defeated chiefs frequently seeking refuge in Canada, it became necessary to determine accurately the boundary line between Canada and the United States. Another bone of contention was a Hudson Bay Company's Post which had been established among the Chippeway Indians and which United States authorities claimed was on their territory.

In June, 1872, the British Government appointed the British North-West Boundary Commission for the purpose of re-surveying the line from the North-West angle of the Lake of the Woods thence south to the 49th Parallel and west to the summit of the Rocky Mountains. Thus the field work of the commission extended from longitude 96 to 114—between 800 and 900 miles.

As soon as appointed, the Commissioner, Major D. R. Cameron, R.A., and Capt. Ward, the Secretary, left for Canada where stores and provisions were purchased and forwarded to Red River. Great care had been taken to purchase the best instruments for the expedition this being done under the supervision of the Astronomer

Royal. And yet it is claimed that the vast line is not wholly correct—straight as a die—owing to unforeseen and unsuspected magnetic influence in places.

The officers of the commission were carefully chosen. Capt. Anderson, R.E., was Astronomer-in-chief, with Lieut. Galway, R.E., as assistant astronomer, with five others called sub-assistant astronomers. A small attachment of 44 Royal Engineers were detailed for duty; and a contingent of surveyors and assistants were appointed by Canada. Dr. Burgess¹ of Toronto was made surgeon; G. M. Dawon² served as naturalist and geologist, and Boswell as veterinary surgeon, while the important work of the commissariat was intrusted to L. W. Herchimer³, whom as we shall see did not always please.

The expedition left England 22nd of August and on September 20th reached the frontier at Pembina where the commission appointed by the United States was also assembled, to begin the joint astronomical and surveying operations necessary. The first experience of the joint commission was a violent snowstorm which lasted three days.

Independently by both Commissions the position of the boundary line at Red River was determined with the result that the much-disputed Hudson Bay Company's post was found to be well within British territory.

An initial difficulty, was determining the exact position of the north-west angle of the Lake of the Woods. In 1826 a former joint commission had fixed upon it and it being in a swamp had constructed a pyramid of logs exactly one mile due south of it. Pyramid and logs had disappeared in the interval and at first the search was unavailing but with the aid of the Indians, traces of the work were discovered and the proper starting place of the work was assured.

The North-West angle is 26 miles due north of the border, the first 16 of which was difficult, through swamp and woods. The point where the imaginary line south met the 49th Parallel was marked by both commissions. The boundary line westerly from the initial point on the west shore of the Lake of the Woods to Red River, 90 miles, was also surveyed during the winter 1872-3. It was through a terrible swamp which frost alone made penetrable though the expedition suffered greatly from the intense cold and violent storms.

April found the whole British party at Red River comfortably housed and waiting for the breaking up of winter in which six weeks were lost. And here Dr. Millman joined them.

In the plan for the Summer's work it was decided to send out parties simultaneously, each to go over about 90 miles of boundary.

The land was reconnoitred by Red River half-breeds, about 30 of them accompanied by an astronomer who selected depot sites, etc., and the best route of travel so that the astronomical parties could at once proceed to their destination. This was necessary, for of the country west of Red River little or nothing was then known. Turtle Mountain proved the most difficult of their problems this year. In following the line they had to cross 65 pieces of water and the party working there was only able to survey and mark 29 miles. In all the Joint Commission surveyed and marked 408 miles in four and a half months and on October 8th a retreat to Red River was ordered. Prairie fires and great storms, one lasting seven days, were the various experiences of the different parties scattered over 400 miles of longitude, but the rearmost arrived at Dufferin, their winter quarters on October 31st.

Just before turning back to Dufferin, a reconnaissance party in Woody Mountain came upon some Sioux Indians engaged in a buffalo hunt and by them were shown a choice location for a depot, so it was decided to make Woody Mountain the new base for the work to be done in 1874.

Early in May the advance party set out. It consisted of 125 waggons—100 drawn by oxen, 25 by horses. Its duty was to reconnoitre, to make roads and to establish depots. Fourteen days later the Commission or main body followed and reached Woody Mountain, the new base, on June the 11th. During this summer, aided by ten weeks of magnificent weather, they surveyed and marked 350 miles to the terminal point on the summit of the Rocky Mountains and on August 29th turned homeward, their work completed.

Dr. T. Millman's Journal

On December 12th., 1872, Dr. Kennedy, Professor of Jurisprudence, Trinity University, Toronto, announced to his class that an assistant surgeon was wanted for the British North American Boundary Commission, and the writer of the diary, just completing his final year in medicine, was chosen from several applicants to fill the position on February 4th., following. The Commissioner was desirous that he should go at once, but it was not possible as the stage was not running from Moorhead to Pembina owing to the horses having the epizootic, a disease which had been very prevalent throughout the American continent for several months—many horses having died of it.

In February, 1873, word was received that the stages were running and Dr. Millman was to go at once, so after a special examination for the

degree of M.B., which he successfully passed (it being too early for the regular examination), he took a hurried farewell of friends and started on his long journey. The trip was a much more difficult and unpleasant undertaking than now-a-days, when the railways bring Winnipeg within comparatively easy travelling distance. He travelled via Chicago and St. Paul by the Chicago and North-West Railway, reaching the latter place three days later after various adventures and delays, such as freight cars off the track and their own engine breaking down. In order to make connections, a night had to be spent in Detroit and another at St. Paul. At seven o'clock of the morning of March 8th., they left by the Lake Superior and Mississippi Railway travelling very slowly as far as Thompson Junction where they changed for the Northern Pacific. The diary says:—"The country between St. Paul and Thompson has a rather desolate appearance, there not being more than half a dozen buildings between the two places except those at the station. When we got near the end of the road the brakeman called Pine City. I wondered to hear of a city up here so made a rush to the car door to see it and lo and behold I saw three buildings situated amongst the pines and a few piles of lumber. There was another place called Rush City. This had a few more buildings than the former. From its name it is rushing towards a city but I am afraid it will be a slow rush. On the Northern Pacific we went as far as Brainard, where we had to remain over Sunday. The country from the Junction to Brainard is as desolate as that passed through. It is thickly covered with timber, consisting of pine and birch. On arriving at Brainard, at about 8 p.m. the town presented a romantic appearance; the buildings are situated right in the bush and the lights shining through gave it the appearance of an Indian settlement. I went to church on Sunday twice with Mr. Sanborn, general ticket agent of the road. He informed me that there are 1,000 inhabitants now where three years ago there was not a house, only two or three wigwams.

At 6 a.m. Monday the train carried me away from this romantic town and the speed was fairly good for about sixty miles, when suddenly it stopped, all at once, being snow-bound. We had just arrived on those prairies where the wind has a chance to have full vent. It was blowing strongly and the snow was drifting fast into the road. The men worked about an hour and a half, when they put on steam and pulled out of that drift and after running a mile, rushed into another, much worse. Here they waited for some time when finding that a train was approaching from the other direction they backed into a switch. The other engine soon cleared the track as she was armed with a snow-plough. We felt greatly relieved, as we thought the road would now be clear, but in a short time we were stuck again with the snow drifting so fast we were soon wedged in that we could go neither backwards

nor forward. The engine was detached and after an hour or so was started and was soon out of sight. Although it was night we could see a considerable distance as the moon was shining in all her glory. After waiting an hour or two and not seeing the engine returning we began to think we were doomed to stay there all night. The accommodation was not bad but there was nothing to eat and, as we had not eaten since 7 a.m., we felt rather hungry. In fact our appetites became so keen we were bound to find something eatable. On going into the baggage car we discovered a few sacks of potatoes. Two or three of us opened one of these and, taking out potatoes, put them in the stove to roast. Some of the passengers laughed at us, but we didn't care, as we thought that would be better than waiting till morning without anything. In about twenty minutes they were cooked as we had them in a good bed of coals. While eating them we could see that the other passengers' mouths began to water. Then first one, then another, would go into the baggage car, return with two or three potatoes and pitch them into the stove. While they were impatiently waiting for them to roast the cheering sound of the engine was heard. This made every countenance brighten.

On the engine drawing nearer we found that she had two others to assist her. In a short time we began to feel the cars moving and soon came to the village of Hobart, where we had supper and you had better believe we did ample justice to it although it consisted chiefly of fat fried pork and potatoes. In half an hour we were leaving that place and at 10.30 arrived at Detroit—the next station—where the conductor informed us we would have to stay all night. I went to the New England Hotel, being informed it was the best. It being a very small building, I could not get a bed alone, but had to share it with a companion. Our bedroom was so small there was just room to crawl between the bed and partition. At 6 a.m. we were aroused from our peaceful slumbers, and were soon on our way speeding toward the West. We arrived at Moorehead at 10 a.m. This ended my railway journey. I was not sorry but dreaded the next ride by stage—160 miles of it. I had dinner at the "American"—not much of a place but I suppose pretty fair for this part of the country. A piece of beef was set before me which, to my eyes, looked delicious as I had been feasting on pork for the last few meals, but on attempting to cut it I thought my knife was dull. After much tugging I managed to get a piece off. Then I discovered it was not the knife's fault but the meat was so tough I could not chew it. I concluded it was a piece of an ox that had seen at least a score of years. After dinner I found the stage would leave at five. On it I had as companion the station master of the place we were to put up at. It is called Georgetown and consists of one house and stable.

Wednesday, March 12th., when I arose I found that I would have company the rest of the way. The party consisted of Lieutenant Bradley and his wife, Fort Pembina, J. Henderson, a merchant of Winnipeg, and two French Canadians. Being a mild day and my company very friendly the time passed quickly and pleasantly. When we arrived at the third station two or three of us went into the house, while the drivers changed horses. The man of the house soon started to fry some pork but knowing that would be all we would get and, it being one o'clock, we thought we would leave him to eat his own pork and go on to the next station where we would get a decent repast. These stations are 14 or 15 miles apart. The horses are changed at each of these. They drive four at a time. The name of the station at which we had dinner is Frog's Point. Taking about an hour for dinner, we started on again. Being quite mild, Henderson, the two Frenchmen and I had a game of euchre. We got to Grand Forks, Dakota, at 5.30. Here we stayed all night. It was quite a little village. The house was comfortable for this part of the country. The bedrooms were very small and the chinks in partitions so wide, we could easily see into the next room. In the morning, after breakfast, Bradley, Henderson and I took a walk down to Red River and saw three vessels—Dakota, Selkirk and International. After tea we entered the stage once more.

We were travelling all night but it was pleasant as it was quite mild. Towards day-break it began to rain but, our stage being covered with canvas, we did not suffer much. Arriving at Fort Pembina at 2.30 Lieutenant Bradley and Mrs. Bradley left us.

The whole road from Moorehead to Pembina is across the boundless prairies. The sleighing was splendid. On reaching North Pembina, a distance of two miles, I left the stage and set off on foot down Red River to try and find the barracks, but did not go far before I was given a ride right to the barracks. Arriving there, I called on Dr. Burgess (chief surgeon). I found him gay and happy. It being just the officers' dinner hour I dined with them, after which I was conducted to my quarters by the sergeant-major. I was then introduced to my room mates. After chatting a few minutes I turned to work and made up my bed, which consisted of two benches and a couple of boards stretched across them. Clothing consisted of two blankets and buffalo robe. Next morning I went around with Dr. Burgess and saw the patients. There were only two or three—one with frozen feet, one of tuberculosis and a few of chronic rheumatism. The rest of the day we were looking over field panniers.

The barracks which have been named Dufferin after Lord Dufferin, the present Governor-General of Canada, are situated five miles North of South Pembina on the West side of Red River, 780 feet above the sea level and 40 feet above present height of Red River. It is nearly

surrounded by a small strip of bush. Beyond this the boundless prairie. The bush consists mainly of small poplars, a few ash and oak. The buildings are all frame and consist of officers' quarters—a two-storey building—and attached kitchens, three one-storey buildings for the assistants and men, and a stable for fifty horses, store house, cook house, bakery, work-shop and smith-shop. Captain Cameron, the commissioner, has a cottage for himself some distance from the barracks. He is married and has one child. His wife is a daughter of Dr. Tupper, an illustrious politician of Nova Scotia. All these buildings cost \$35,000. Other officers are commissioner quarter-master, Herchner; secretary, Lieutenant Ward; chief astronomer, Captain Andrews. His assistants are Captain Featherstonhaugh, Lieutenant Galway;—sub-assistants, Burpee, Coster, Ashe and King. The surveyors are Forrest, King and Rush; Dr. Burgess the surgeon. The veterinary surgeon is Boswell.

In the commission there are 150 men;—50 Royal Engineers and the rest civilians. They left England last August (1872) arriving in September. They have been surveying ever since. Beginning at the North-West angle of Lake of the Woods they went directly South till they came to the 49th. parallel. During the winter the British have been surveying alone. The Americans left for the winter.

Sunday, March 16th., at 10 a.m., went to church parade. We have no minister but Lieut. Ward read morning service.

Friday, 21st., ice in Red River is three and a half feet thick. Some of the men are cutting it.

Sunday, 23rd., some of the men started out with food for the men and horses out at camp some eighty or ninety miles away.

Monday, 22nd., Dr. Burgess and I were drawing plans for medical boxes. Intend to send sixty of them out with the different parties. We were busy at it till three when some of the officers from the American camp came over. I was introduced to Dr. Woodruff. In the evening Dr. Burgess and I finished the chests. Captain Cameron left to-day for Ottawa.

March 25.—The men had quite a time with a balky horse. They were drawing a load of ice and the horse took a notion he would not go. I suppose he thought he had done enough for one afternoon. They, at first, coaxed him, then they thrashed him,—two at a time. When they got tired two others would try a whack at him for a while. When they found the poor brute would not comply for this treatment they thought they would try and drag him and the load. For this purpose they got a rope and tied it around the horse's neck. When they had done this about fifteen of them tried to drag him along. The rope being a slip knot they nearly choked the brute so that he fell down. They

got him up and tried it again but found it was no use so unhitched him and got a yoke of "horned horses" and took the ice to its destination. One dumb animal against fifteen anything but dumb—for the air was blue—won the day. At nine in the evening word came that one of the men out in the field had been killed by a falling tree, striking him on the head. The tree was felled by Coster, one of the astronomers, the victim's name was Wilson, one of the axmen, a native of Ireland. We had an inquest the following day. The verdict was that he was killed from a transverse fracture of the skull and that it was purely accidental.

Saturday, March 29th., I went with Mr. Marchant, a half-breed, to his home, seven miles distance, to see his child who was sick. I had dinner there of fried pork and eggs, bread, butter and tea—not a bad meal for a half-breed's home. There were a dozen children, some of them not bad looking, two or three being quite fair complexioned. After dinner he took me back to the barracks—arriving at four. After that Bain and I went out on the prairie to see if we could shoot any prairie chickens—but failed. Snow is settling fast on the prairies.

Sunday, March 30th., attended church parade in the morning. Rev. Mr. Pinkham, of Fort Garry, preached and administered communion.

Saturday, April 6th.,—Wild geese were seen to-day. Burgess and I have been arranging the library.

April 7th.—Had walk of three or four miles on prairie.

In the morning visited patients—all doing well. After that mended some more of the libraries. Ten of the men went down the river to get out rails. They have camped there. Bunyan went down as overseer.

April 11th.—Good Friday. At ten, Burgess and I took a walk to North Pembina. As we were going I got a good ducking in one of the coulées. The ice gave way when I was crossing it. Burgess had a good laugh. He said it paid me for laughing at him in a similar misfortune the day before. Got back to the barracks at two when I put on some dry clothes. Have been reading lately "The Red River Expedition"—1870—by Capt. Huycke. We are now busy in getting the medical boxes ready for going out in the field—writing lists of contents and labels to be pasted on edges of medical boxes for the different drugs.

April 16th.—The Red River has risen six and half feet since it began to break up about a week ago, partly owing to the thaw and partly to the water not being able to get away toward the North—the direction in which it runs.

April 18th. After visiting patients I was busy during the rest of the day writing labels for bottles for medical box. The ice on the river moved about 100 feet to-day. Birds are now becoming quite numerous.

April 19th. The ice is going down the river which is still rising.

April 22nd. After visiting patients, Burgess and I started for North Pembina. Prairie is cracked in many places and is so regular that it appears to be paved with small irregular blocks. The green grass begins to show.

April 24th. Mason and I went out shooting. Each got a brace of prairie chicken. They commenced ploughing to-day. After dinner the Royal Engineers had their photograph taken in a group. The Royal Engineer officers were with them. In the afternoon I was labelling bottles—Some of the men went out in boats.

Sunday, April 27th. After breakfast attended patients, then went to church parade. Captain Anderson read morning service. Mrs. Cameron and Mrs. Herchmer were present. After service Eeles and I had a walk on the prairie. About seventy geese flew over us. Ice about all gone down. Spent evening reading Butler's Analogy. I find on reading up about this country that Red River rises from Elbow Lake about 1,689 feet above sea level—nine feet higher than the source of the Mississippi. The Red River at first runs south. The Mississippi at first runs north. Lac Travers sheds its waters both north and south to Hudson Bay and Gulf of Mexico. It is the only water that does so. Red River is 900 miles long. Winnipeg River falls 160 feet in 360 miles. I got this information from Capt. Butler's "Great Lone Land". Pigeons are flying about and mosquitoes are putting in their appearance. Ranard, a half-breed, was married to-day to Nancy Goselin, also a half-breed. After the wedding she was flying around in her green and blue ribbons. He went to his work as if nothing had occurred. I made a "housewife" which I believe I will find as useful up here as Ranard will his.

April 30. Dr. Burgess and I set a fractured clavicle. The victim was Carmichael—a teamster. We put pads in axilla, tied arm to side, then he lay down on his back. This brought bone into good position, so that we left him lying in that mode. In the evening another accident occurred which was more serious. Sapper McCammon went to fire off an old flint gun when it burst and a piece struck him in left eye, injuring it badly. There was a profuse bleeding from temporal arteries. This was arrested by cold water and tincture of iron. On examining deeper, the bone was found broken. Several pieces were removed which left brain exposed one inch long, half an inch wide. While removing the pieces there were symptoms of compression. These ceased when pieces were removed. Four hours after the accident the wound was closed by adhesive plaster and cold water was kept applied.

Thursday, May 1st.—McCammon much the same. On examination I find the eye is injured. The Red River is now 29 feet, 8 inches above

winter level. Sent letters to Bastow to bring me down fifty rounds of cartridge for Spencer's Cavalry Carbine. Dr. Burgess and I were working at panniers nearly all day.

May 2nd.—McCammon better. Wound not so puffy. Red River is thirty feet, three inches up. "Selkirk" came from Moorehead this forenoon. It is the first boat of the season and brought mail. By the paper I see that I have received my degree. I am mentioned as "Thomas Millman, of Manitoba, in his absence". Captain Cameron returned by the boat also Carvel.

May 3rd. I saw a humble bee and flies are getting plentiful. There was a large prairie fire on the other side of the river. At night it presented a beautiful appearance and looked as if it were a string of watch-fires. Pulled two teeth for Sapper Duckworth. Have only pulled one tooth before. Capt. Cameron brought a live snake in a jar to headquarters.

May 5th. Eight or nine of the men struck for higher wages, contrary to their expectations they got their ticket of leave. They went to Fort Garry on the "Dakota" which came along about 2 p.m. At three the "Selkirk" arrived from Garry. Twenty-five new men came by her. We had thunder and lightning to-day.

May 9th. Twenty-five new men arrived to-day from Garry via "Dakota". Prairie is getting quite green. Plants are growing very fast. After tea had a walk on prairie with Carvel, one of the astronomical computors. He is a native of New Brunswick.

May 10th. Dr. Burgess and I busy all day filling bottles for medical boxes. A flat boat from Moorehead came along and I got some maple sugar and apples. After tea had a walk with Allen on the prairie. While I was away one of the civilians had the index finger of his left hand nearly torn off by a dog. It seems that he was the worse for liquor and was out with a gun. Two of the dogs were fighting and he tried to separate them. In so doing he received his injury. Dr. Burgess put in two hair lip sutures and treated it with cold water dressings. Afterwards it was found that he had a tremendous charge in the gun, so that you might say it was a blessing that the dog bit him.

Monday, May 12th. Sergeant King and party started to-day for the field. The party consisted of Sergeant King, chief surveyor, Sappers Slocum and Vale, went as his assistants, Sapper Allen—picket man, Sappers Maule and McNichol—topographers, Sappers Scrumshaw and Campbell—general assistants, Sapper Deverell—cook, Civilians Foley and McCammon—teamsters, Civilian Hewitt—axeman and Civilian A. H. Wright—depot man. They went eight miles near Moray River. They had three ponies and carts, one spring waggon with a horse and a saddle horse. I was busy with the medical boxes most of the day.

Thursday, May 15th. About 4 a.m. word came that Boswell, veterinary surgeon, and his party who were bringing up the horses from Moorehead were in danger of being attacked by Indians. A party of seventeen started from the barracks fully armed under the command of Capt. Featherstonhaugh at 7 o'clock. Dr. Burgess and Lieutenant Ward accompanied them. They went by St. Joe near Pembina Mountain.

On the seventeenth this party returned. They got a message about fifty miles the other side of St. Joe that the report was false.

Wednesday, May 21st. I finished filling the medical box for Galway's party. The river has gone down two feet, five inches. Trees, especially poplars, begin to present a green appearance. Boswell and party with horses got the worse for liquor and were kicking up a great row, such as shooting, smashing up utensils, etc.

May 22nd. The horses and men arrived—130 horses and ponies, 40 or 50 waggons, 2 medical ambulances and several water carts, between 30 and 40 men. East and his party were along, also Kingston, an assistant surveyor and Chapman. I also fell in with Chas. Puckridge. Meeting with an old friend is cheering, especially in such a forsaken country as this. I suppose he was no less pleased to meet with me.

May 25th. The "Selkirk", from Garry, came during the night. Rev. Mr. O'Meara came up on her. Held service at 11 a.m. The "International" came in the afternoon from Moorehead. Mr. Almon came down on the boat. He is to superintend the farm. He comes from Nova Scotia and brought his wife with him.

May 26th. Dr. Burgess and I packed sixty library books for Galway's party. They left at two o'clock. This party consisted of:—Lieut. Galway and two assistants, a computer, a depot man, six teamsters, two axemen, two cooks and seven engineers, under Sergeant-Major Flower, and Galway's servant Renard. The party went as far as the customs house and intend remaining there a week or so. In the afternoon I was busy filling the medical box for Mr. East's party.

May 28th. Mr. Bastow returned in the boat from Garry, where he has been practising dentistry and did pretty well. Owing to so many people coming together from various parts of the world, they cannot very well agree and consequently to-day we had a little pugilistic encounter, from the results of which one man got his upper lip split, and the other had two of his fingers injured badly. Twenty-two yokes of oxen and waggons arrived to-day from Moorehead. Our men were planting potatoes to-day. Have been busy copying out the commissioner's instructions for the various parties.

By May 31st, everything was in readiness to leave barracks and the various surveying parties to take to the field. That day fifty half-

breed rangers, under Capt. Hallet, from Fort Garry, arrived to act as scouts and to protect the party from the Indians. The same day a beef was butchered—the first beef for several weeks, (and I was busy writing out instructions for various field parties.)

The party was divided into the following departments:—

1—Topographical; 2—commissariat; 3—medical; 4—veterinary; 5—natural history. Dr. Millman here quotes from Instructions to Medical Officers: "Subject to the approval of the commissioner the surgeon will issue such general directions to the head of each department as he may consider conducive to the health of the parties and consistent with the duties they may have to perform, accompanied by instructions and appliances to meet simple cases which may be treated without the presence of an experienced medical man or others that may require immediate action. Amongst the cases to which his special attention is directed are prevention and treatment of scurvy, diarrhoea, fruit poisoning and the treatment of cuts, fractures, shot wounds, bruises, sun-stroke and apparent death from drowning. He will take the earliest opportunity to vaccinate every member of the party who may not have been previously vaccinated. While in the field he will take advantage of all available means to enable reference to be made to him without delay, by any who may require his assistance. Under ordinary circumstances he should govern his movements so as to be equally accessible from the extreme points of the country under survey at any one time. He will render such assistance to the Department of Natural History as may be compatible with his special duties. The transport of this department, with the exception of that required for medical stores issued to separate parties, will be under the control of the medical officer.

"Beyond the duties connected with the general organization of the party the commissioner desires to bring most forcibly to the notice of each individual the necessity there will be for a most discreet bearing toward the Indians who may be met with during the progress of the survey. It is presumed that all of those who may be encountered during the first three hundred miles to be passed over are prepared to tender us a friendly reception. Such being the case it is more imperative than were they hostilely disposed toward us, that nothing should be done to offend their susceptibilities, and the commission will not fail to take grave notice of any inattention to this point.

"He strictly enjoins upon all to support him in maintaining friendly relations with the Indians, to show them every consideration and to avoid even the appearance of contempt toward them. He also enjoins that in case of Indians desiring to confer with any of the commission they will be glad to see them; that no authority has been deputed to

members of the commission to discuss Indian questions; that the object of Her Majesty in sending out the commission was merely and purely to mark a line with a United States' Commissioner, to the North of which the United States agreed not to encroach and that nothing could cause Her Majesty greater dissatisfaction than that any of her servants should cause her friends the Indians to doubt her friendly feeling for them or to forget that they have always been at peace with her."

June 5th. In the forenoon Mr. Dawson, Dr. Burgess and I went out hunting birds and flowers. We got twenty different kinds of plants.

June 6th. Mr. Fish and I went to South Pembina in one of the medical spring carts. We found that the river had sunk so much that the coulées (water holes) had dried up.

June 7th. Capt. Featherstonhaugh and party left for the field this morning. They are going to Pembina Mountain—thirty-six miles. Ashe and King went as his assistants. The party is twenty-five or twenty-six strong. Had my first bathe in the river at 4 p.m. Water was very warm.

June 9th. Col. Forest, one of the surveyors, arrived by boat during the day. I was busy filling medical box for his party.

June 10th. Mr. Dawson, Dr. Burgess and I went out in the afternoon hunting flowers and shooting. Got several kinds of flowers and three or four different kinds of birds.

June 11th. Capt. Anderson went out to field to form a depot and reconnoitre the country. He took the half-breed scouts with him. Before leaving, one of the teams took a notion to cause a little sport by running away. They, themselves, were not injured nor the waggon to which they were attached, but they smashed two others, one of which belonged to Capt. Hallet, the commander of the scouts or 49th Rangers, as they have been called. It seemed that this day could not pass without another accident. In the afternoon Herchmer hitched a fiery roan steed to his buckboard. It did not go far before it began to kick and then run. Herchmer, seeing there was danger of being knocked against a tree, made a leap from the rig and fell upon his back. He received no injury but his coat was badly torn and the buckboard smashed into atoms.

June 12th. In forenoon was visiting patients who are now very few. Marks with a sore leg and McCammon, whose eye has not recovered from the injury. He never will be able to see out of it. He is busy with his work again.

By this time the Commission numbered 257, as follows:—

15 officers, 1 farmer, 2 surveyors' assistants, 2 computers, 3 topographers, 13 depot men, 1 waggon master, 1 chainman, 3 foremen, 74



teamsters, 14 cooks, 43 axemen, 11 servants, 43 Royal Engineers and Commissioner Hallett with his 50 49th Rangers. The transport consists of 55 store waggons, 12 spring waggons, 19 Red River carts, 2 ambulances, 15 water carts, 2 spring carts, 91 draught horses, 16 riding horses, 32 draught ponies 7 pack ponies, 32 yoke of oxen. Hired transport consists of 8 men with 15 carts and ponies. 30 men more are needed to complete the commission.

June 16th. In morning went to post office in medical cart. Name of post office has been changed to West Lynne. On returning I was writing out medical instructions when Poulter got his legs badly hurt by a horse running away. The horse kicked him several times cutting him badly. The same horse that ran away with Herchmer. The commissioner has kindly offered me the use of one of his guns for the summer.

On June 24th. the doctor joined Capt. Galway.

At 9 a.m. I got word that I was to leave at 1 to join Capt. Galway's party, at that time I left, I was equipped with a medical ambulance, on the shoulder of which was carried the medical panniers. Mr. Burgess is the teamster for this. It is drawn by 2 horses and there is a spare horse led behind. As this one is out in the field with Capt. Cameron I have not got it at present. I rode in the ambulance, I also had a spring cart, drawn by one horse, Kennedy teamster, this carries the medical box, botanical box, 12 large pots of Lieby's extract, 12 boxes condensed milk, 15 lbs. sago, 4 lbs. arrowroot, 6 bottles brandy, 6 of wine, 2 axes, 1 pickaxe, 1 spade, 1 scythe, 15 ft. of $\frac{5}{8}$ inch rope, 3 gals. lime juice and set of cooking utensils. I also have a water cart drawn by one horse driven by Michael Carney, it holds 500 lbs. of water. I have a Hudson's Bay tent for myself and another for the teamsters. My bedding consists of a waterproof sheet, buffalo robe and 3 blankets, I took out a good supply of clothes, am allowed 100 lbs. including bedding. The men are allowed 70 lbs. each. I reached the camp about twenty miles distant at seven. The whole of this distance is across an open level prairie. After getting out about eight miles from barracks, Pembina Mountain begins to show itself. I did not put up my tent but slept in the computing tent, my first night under canvas.

June 25th. Lieut. Galway shifted camp. At 10 a.m. we left this place called Port Michell, travelled across the open prairie to Capt. Featherstonhaugh's camp at the foot of Pembina Mountain—a distance of 15 miles. Found all well. They were camped in a low place, one of the worst they could pick. A splendid place, I should imagine, for fever and ague.

June 26th. At ten we left Capt. Featherstonhaugh's camp, for which I was not sorry owing to its being so low and having an unearthly

smell about it. We travelled nearly due north to Pembina Depot—8 miles—keeping the mountain on our left about half a mile distant. It is a beautiful elevation about two hundred feet in height, is covered here and there by beautiful clusters of fine oak trees. It is full of ravines. Owing to this and the height on the line, they have to go north in order to pass it, we arrived at the depot at one. Remained here all night. It is a very pretty place. The depot, which consists of a log shanty is placed just at the edge of a bush. Just behind the building in the bush is a beautiful stream of water. The banks of this are covered with wild rose bushes in full bloom. Poison ivy abounds. Deer and antelope are also seen. Capt. Featherstonhaugh's party arrived at two on their way to Turtle Mountain.

June 27th. Rose at 3.30 a.m. At 5 a.m. both parties left. They went two miles north, then west. Lieut. Galway's party camped at Pembina River, twenty-four miles from the depot. Capt. Featherstonhaugh's party went further on. The country has a very picturesque appearance. From the depot to the river it is interspersed with woods and rolling prairie. There are here and there some very deep ravines. In the bottom of these it is very soft so that the teams would get stuck. By doubling the teams and by everyone putting their shoulder to the wheel the waggons were got out. We arrived at the river at five. It is a deep gully between two beautiful hills. It runs close to the foot of the west hill. On the east side there is a delightful level flat about half a mile wide. As soon as we got settled down, Burpee, Coster and I went for a bathe. It was splendid. The water was from two to six feet deep. The bottom was hard and gravelly and the water quite warm. About twelve we passed a sharp elevation of land called Calf Mountain about fifty feet high and same in diameter at base.

June 28th. We left this beautiful valley at 5 a.m. and went directly west. It was mostly rolling prairie. Came across a small prairie fire. The green grass burns very fast. We went three miles beyond Long River where we camped at five. It is twenty-four miles from Pembina River. There was rain and thunder and lightning during the evening.

June 29th. At 6 a.m. we were on the march again although it was Sunday. We went about six miles west, then due south for ten miles, which would strike the line and where Lieut. Galway was to make his next astronomical station. The place for the station is on the open prairie. The nearest bush is eight miles and the nearest water four miles. This is a lake and a swamp. Owing to there being so many ducks, the station has been called "Duck Swamp" or "Sleepy Hollow". East and south of us there is no bush for seventy miles, and west of us not nearer than Turtle Mountain twenty miles. We had dinner to-day near a small stream of water called Badger Creek. Burpee, Coster and I had a bathe in it.

7 July 1st. Shifted camp again a mile north nearer line.

July 3rd. We had heavy storm during the night. The tents leaked badly. The new Hudson's Bay tents are perfectly useless in keeping out rain. During a heavy shower you can soon catch a basin of water.

July 7th. In forenoon I attempted my first washing of clothes. Washed three shirts, one jersey, two pair of socks, two handkerchiefs. Before I got through I succeeded in taking nearly all the skin off my fingers. Had strawberries for tea—not very plentiful in these parts, numerous on Pembina Mountain. Big blue flies are very plentiful. Some of them have quite a yellow back.

July 8th. Capt. Anderson called at the camp. He was on his way to Turtle Mountain, then to Souris River. He said Dr. Burgess had gone out to the mountain. Bain went to Long River depot. I sent word by him to Lieut. Ward to send me six bottles of brandy as by some mistake it was all wine that I had and none of the former. My spare ambulance horse has arrived from Turtle Mountain.

July 10th. We shifted camp twelve miles west. My ambulance horses ran back. Teamster Burgess found them at the old camp.

July 11th. I went on the line with Burpee and Lieut. Galway used the instrument B. and I fixed the target at the proper place. Went four miles. Bain went to Turtle Mountain. Brought back some fresh beef. The first we have had since leaving barracks.

July 12th. Very strong wind last night everyone was out taking care of their tents to prevent them blowing down. All stood it very well except the office tent, the ridge pole of which broke in two. Went out on the line with Burpee. Reached Capt. Featherstonhaugh's camp at foot of Turtle Mountain. When you get near the mountain it does not appear to be more than one hundred feet high, but, owing to the gradual rise from Pembina Mountain to Turtle Mountain, the latter is about six hundred feet higher than the former. It is well wooded with oak and poplar.

July 13th. The prairie looms like one large flower garden.

July 16th. Dr. Burgess arrived from Turtle Mountain. He has received word that Corporal Drew was very ill at Pembina Mountain Depot. As the doctor had a patient at Turtle Mountain Depot in a critical state from a tree falling on him breaking three ribs, he was unable to go himself so sent me back. I took the spring cart with one of the grey ambulance horses. I took medicine pannier and one of the baskets and box of instruments from material pannier. I left at ten. Lieutenant Galway and party left for Turtle Mountain about the same time. Lieut. Ward accompanied me as he was going into Dufferin. Reached Long River at 6.30. Remained all night.

July 17th. Lieutenant Ward and I left Long River Depot at 6 a.m. Two scouts accompanied us. We lunched six miles East of Pembina River where we caught up to Mason and Hambley, Lieutenant Ward's servants who had gone ahead of him. I left them there, the two scouts going with me. We reached Pembina Mountain Depot at seven. I found Corporal Drew suffering from tonsilitis. He was pretty bad but better than he had been the day previously. Between Long River and Pembina River I met with King on his way to Turtle Mountain—got from him my mail from home. I also met the commissioner who was also going out to Turtle Mountain.

July 21st. Left for Turtle Mountain at eight, taking Drew with me. Arrived at Pembina River at five. Remained here all night. Flies awfully bad in middle of day. Made the horse almost crazy. Mosquitoes very bad at night. Met commissioner on his way back to Dufferin. Arrived at Turtle Mountain at four. It presents the appearance of a small town. Captain Anderson, Dr. Burgess and Mr. Boswell, veterinary surgeon, were there, the Royal Engineers, who are working at their trades, Major Turning and Mr. Gregory and parties, also Mr. Green and party. The former mentioned are the astronomical parties of the Americans and the latter their surveying party. They have only one surveying party. I pitched my tent next that of the officers. This depot consists of a large, long building, and a shed beside it contains the harness and smith shop and the carpenter's shop.

Sunday, July 27th. I left at ten to rejoin Lieutenant Galway's party on east crossing of Souris River. Owing to the commission being about to be reduced by fifty or sixty men, I lost one of my teamsters. Mr. Burgess still takes care of the ambulance and horses, Kennedy of the other waggons. Three commissariat teams went along with us, taking provisions to the depot. We went about fifteen miles. This took us through a rather low and marshy prairie. It is just along the north end of Turtle Mountain.

July 28th. At 6.30 a.m. we started again. During the first ten miles there was a lake about a mile north of us called "White Water Lake". It is long and narrow—length east and west. We went twenty-five miles. The prairie was rather high and rolling. We passed the head of Turtle Mountain about two o'clock. Saw the Sioux tents or tepees on it. Camped at 7 p.m. on open prairie. No wood to be seen. We had some with us—very little water.

July 29th. Started at 7.20. After travelling over undulating prairie till ten o'clock we reached the east crossing of the Souris River. The stream runs north. The road crosses it between the mouths of the two Antler Creeks. The river is close to the east bank. On the west side is a large flat. The depot is situated on the south bank of the South

Antler Creek and is called Deer Head Depot. It is nine and three quarter miles north of the line. Timber on these streams is principally soft elm, a little ash and oak. After dinner, started down to the line which I reached at four thirty. Found Lieutenant Galway and party there.

July 30th. I was botanizing in the forenoon. In the afternoon we shifted camp twelve miles farther west on south bank of South Antler Creek. It runs south of the line here.

July 31st. While botanizing I got an Indian skull out of a grave. It appears to have been about twelve years of age. A few trinkets were also found in the grave. Prairie chicken are plentiful. The young ones nearly full grown. A few ducks are also seen on the creek.

August 2nd. We saw some antelopes, several made a rush for them but failed in getting any. This is the first of the deer tribe I have seen running at large.

August 6th. Had a bath in the arrangement I made yesterday, consisting of my ground sheet laid in a hole in the ground of the tent six or eight inches deep, two feet long and about one and a half feet wide. It can be as long or wide as one wishes and takes up very little room in the tent. At ten Coster and I went shooting. We went on horse back. I rode his mare pony which he has called Jack and he rode my "Esculapius". We got no game but had a feast of berries. They are the same as are put in pemmican of a bluish black color and very sweet when ripe.

August 7th. Had a severe thunder storm with wind and hail. Many of the hail stones were an inch in diameter. They made the ground quite white. The ground was flooded so that nearly everyone had to spend the night in a wet bed. Mine kept dry as I had it off the ground and an oil sheet over it. Several of the tents were blown down. The horses broke loose and cleared off to the bush.

August 8th. We shifted camp going to the west crossing of Souris. Started at eight, went eighteen miles across undulating prairie, leaving South Antler Creek to south of us, touched North Antler Creek twelve miles out. On the way out Coster and I took turns about reading "the Virginians" aloud while riding in the ambulance.

August 9th. We started at 6.30. At eleven the west crossing of the Souris came in view. We did not see it till we came within half a mile of it owing to its being a great deal lower than the prairie. The tops of the trees are a great many feet below the level of the prairie. After lunch we crossed the river just on the boundary line. The banks are very steep and there are a great many coulees leading into the river on either side. As we were going down the hill into the river one of the ambulance horses shied, causing the ambulance to tip over into the

river, taking along with it its riders, viz., sergeant-major, Coster, teamster and myself. Fortunately the rig went over very easily so that it was not damaged and none of us was hurt, scarcely getting a ducking as the water was only about two feet deep. As there was plenty of help we were soon right-sided and went on our way rejoicing. We camped on the top of the hill on west bank. Here is also a depot kept by Tompkins. From here we had a splendid view. On the east bank were camped the American cavalry. The "Stars and Stripes" waving on one side of the river and the "Union Jack" on the other, presented the appearance of two enemies encamped. I procured from the depot a Spencer rifle for myself and two for my teamster with fifteen rounds of cartridge for each. There are a great many choke cherries and those berries previously mentioned on the banks of the river. Timber is principally oak and elm.

Monday, August 11th. Have been doing a good deal of botanizing. L. H. Herchmer arrived this evening from the West. He has been out eighty miles beyond this. He says he saw many deer and buffalo. No wood beyond next principal depot which has been called "Woods-End".

August 12th. Capt. Anderson arrived at noon from the West. He and Herchmer were out together. He reported a settlement 450 miles from Pembina. At Woody Mountain about one hundred families of half-breeds.

August 13th. In the forenoon I rode over to the American camp and to an Indian grave about half a mile on east side of the river. The grave was protected by sticks stuck up endwise and interlocked at the top. But some animal had torn the grave open and dragged out part of the body. The bones of the head were on top bleached as white as snow. A train of half-breed traders came through from Wood Mountain to-day on their way to Winnipeg. They were loaded with pemmican and hides. They had three spring waggon and about fifteen Red River carts. They were under command of one, Howard, who was a colonel in the Southern Army during the late Civil War.

August 17th. I had a note from Dr. Burgess telling me to return to Turtle Mountain with the whole of my outfit to relieve him as he wants to go ahead.

August 18th. Rose at 5.30 a.m. Lieutenant Galway and party shifted camp fifteen miles on. I and my outfit left at nine for the East. Reached camp on South Antler Creek at five and found Corporal Maule and portion of King's party there, some of them suffering from diarrhoea owing to the water.

August 20th. Reached Turtle Head Creek at 2.30—the last thirty miles without a drop of water as coulées and holes are all dried up.

We arrived at Turtle Mountain at 3.30 on following day. Found Capt. Anderson, Dr. Burgess and Boswell there, also King, who is suffering from intermittent fever.

September 3rd. My teamsters arrived in the evening with horse to help us out of the mountains. Have to leave owing to provisions running short. There is no flour and the beef cattle are lost. The last meat we had was one of the commissariat oxen which was left at depot being unable to go any further; it was so poor.

September 4th. Rose at six. The transport consisted of two carts and six pack horses. The carts took two loads yesterday to the point we leave the line for depot. Ashe, King and I mounted our mustangs at eight and departed, having cut about seventeen and a half miles of the line. We arrived at the depot at two. The transport did not come till late.

September 6th. We left depot to go West. King, Ashe and party going on till they find Capt. Featherstonhaugh. They left axemen behind. I and outfit went along with them. My water cart upset crossing the creek near depot and broke one of the shafts so had to leave it behind. Took the horse along.

September 7th. Arrived at Deer's Head Depot at 5.10. No water that distance but took a barrel of water along so that each horse had a pailful at noon. We got flour here also some beef, having killed an ox, left behind by ox-train. There is a camp of Sioux Indians near this depot.

September 8th. We started at 7.40. At 11.30 we met Bell's train. They brought word from Capt. Featherstonhaugh to King telling him to finish the cutting, stating that the Americans had cut ten and a half miles, leaving only about six and a half. I got a letter from Dr. Burgess telling me to remain with the party. As there was plenty of flour and two oxen at Deer's Head, King decided to return there. We arrived back at 5.30.

September 12th. Started on at eight. Reached Turtle Head at 5 p.m.

September 13th. A band of fifty Sioux Indians arrived to-day. They intend to remain in the mountains all Winter to hunt. We could see them as they marched across the prairies. The squaws had to carry the baggage as well as their young ones. They had one or two horses which carried loads by means of "travails". This consists of two poles about twelve feet long, one end of them fastened to the horse; the other drags on the ground. By means of strips of skin they make a netting between poles on which they lace the goods to be conveyed. When on the march a party will average twenty to thirty miles a day.

This, one would think impossible for the old squaws with the loads they carry and for the children five to eight years of age. Both Indians and squaws have a blanket which they get from the Hudson's Bay store in exchange for skins. Men wear a pair of leggings, a sort of fixture around loins and some of them a skirt. The squaws wear a skirt made of blue material which they get from Hudson's Bay store, also leggings of same. Then they have a jacket on the body, over which is the the blanket. Both wear their hair long, but the former plait theirs and wear a band around the head. They paint their faces with all kinds of hieroglyphics. One or two of them could speak English fluently. Their wigwam, which they call "tepee" is similar to others. These Indians had a hand in the Minnesota Massacre, 1862*. I believe they have two or three white girls with them whom they captured at that time**.

Wednesday, Sept. 17th. Capt. Cameron arrived in the evening from the West. He made a trip to the north-west angle of Lake of the Woods, thence to Winnipeg. He stated that Capt. Featherstonhaugh and Lieut. Galway were just ready to start to their last station. He was much annoyed that we had been delayed owing to lack of provisions.

September 18th. I bought a pair of moccasins from a squaw, paying \$1.20 for them. The Indians had a pow-wow with the commissioner. They were jubilant on seeing him. Expecting a liberal present from him, they all shook hands. He ordered depot-man Ellis to give each of them two plugs of tobacco, two pounds of flour and three of beans. The commissioner left in the morning. King, Ashe's party and I started for the mountain. We camped at nine and a half mile point—going to form a sub-depot here.

September 20th. We went to seventeen and a half mile point, or end of cutting.

September 22nd. I went out on the line where the party were busy at work. They had just arrived at a very large lake. It appeared to extend for a considerable distance both north and south. The men cut a road across the lake. They had to go about a mile north. Ashe,

*The Sioux Indians became dissatisfied with the Indian Traders and with the non-payment of the money due them. Bands of warriors under Little Crow and other chiefs perpetrated massacres in Minnesota, Iowa and Dakota. Seven hundred whites were slain and many rendered homeless. Colonel Sibley routed the savages and took five hundred prisoners. Many of the bands and chiefs took refuge across the line in Canada where they behaved themselves.

** Afterwards in conversation with some of the tribe he was confirmed in this belief.

King and I spent the evening talking while sitting around a comfortable fire in front of our tents. This is the way we generally spend our evenings.

September 24th. We shifted camp to the other side of the lake. Davidson arrived in evening. He had gone to Dufferin with Teamster Burgess for a load of oats, etc. He brought me mail. The "Toronto Lancet" has come out in a new dress. It has now the appearance of the "London Lancet". Davidson also brought word that Teamster Burgess has got his arm dislocated at the shoulder and wanted me to go up and reduce it. He said it had been out for a week.

September 26th. Snowing and raining—about four inches of snow. About 9.30 I started for Turtle depot. I arrived there at five after a miserable journey. On examining Burgess' shoulder found it was not out but only a bad sprain. So I had my unpleasant ride for nothing.

September 27th. and 28th. The weather being stormy, remained at depot.

September 29th. I returned to the end of the line, arriving at 4.30. They had struck another large lake with an island in the centre of it, which happened to be on the line, so that they had to build a raft to get over in order to cut the line through.

September 30th. Shifted camp to the other side of the lake—twenty and a half mile point.

October 1st. Ashe and I went over to the island on the raft. The island is about nine or ten chains across and nearly round. On it were a great many elm trees. The diameter of one of the stumps was four links. Elm has not been seen anywhere else in the mountain. This lake was peculiar in having a nice pebbly shore. Most of them are marshy around the shore. It appeared pretty deep. The water was very pleasant to the taste.

October 6th. They put in two mounds to-day—one at end and the other at twenty-one mile point. The one at the end of the line was seven chains north of cutting and a little North of American line. The mounds are six feet high and twelve feet in diameter. A post eight inches square and six feet high with "49th Parallel" carved on one side is used. Three feet of this post is put in the ground. The rest is buried in the mound. Three men would put up a mound in three or four hours.

October 7th. To-day was clear and warm—Indian Summer. (For some days they continued putting in mounds.)

October 11th. Capt. Featherstonhaugh's party arrived from the West having completed four hundred and seven miles of the line. The last hundred was through a coteau or bad lands.

October 13th. My horses are lost. Capt. Ward, Lieut. Galway, Messrs. Boswell and Russel and parties arrived from the West.

October 15th. All the parties left for Dufferin. Went to Badger Creek. All the grass along the road was burnt also the hay stack at Badger Creek.

October 17th. All the grass is burnt between Turtle Mountain and Pembina River. Capt. Featherstonhaugh and party and I went eight miles beyond Pembina Mountain Depot. The other parties remained at the depot. We arrived at Dufferin Sunday, October 19th., at 7 in the evening. As our room was full of stores I slept in the harness shop.

October 20th. I pitched a tent and moved into it. I got a nice little stove. Intend to remain in tent for some time. Lieut. Galway and Boswell's parties arrived in the afternoon. Dufferin has grown considerably since we saw it last. They have put up two large store houses. They think they will have sufficient stores to last till the end of the commission, which they suppose will be the Summer or Fall of 1875. They have dug a cellar in the ground about three feet deep. They then put poles over in a gable like manner so that there are two lengths of poles on each side. The lower poles are covered with straw and earth, the upper ones only with straw. Owing to there being no rain or thaw during the Winter they answer very well. They accommodate two rows of horses. They have six of these stables—each holding over thirty horses. The farm was a complete failure. I don't think it was managed properly. It has been a favorable year for agriculture, there being no grasshoppers—or very few—and no other insects to destroy the grain.

October 28th. Navigation stopped on Red River.

October 31st. River now frozen up so that you can cross it on foot. Capt. Anderson, Dr. Burgess and party arrived in afternoon. All are now in except Mr. East's party at Lake of the Woods. Capt. Ward paid off a great many men to-day. Only one hundred and six men are to be kept on during the Winter. This does not include officers.

November 1st. Began fixing up the libraries again and gave Dr. Burgess and Mr. Dawson various kinds of flowers and plants which I had collected and they had not got. Lieut. Galway, Burpee and Ashe started for Canada this morning. Prof. Selwyn accompanied them. As the stages were so over-crowded they could not get accommodation on them they had to hire a couple of teams. I wrote a report of the library telling what books were lost and what not fit for use. Dr. Burgess gave me three hundred and fifty varieties of flowers he and Mr. Dawson had collected around Lake of the Woods.

December 11th. Visited patients as usual and went to Marais River to see a woman—a case of tumor. Capt. Cameron returned from Canada. Col. French was with him. He comes to Manitoba as Chief Commissioner of Mounted Police Force, who are going to remain at the Stone Fort for the Winter. Went to Maria's River to see Mrs. Scott, wife of Scott, of Hudson's Bay store. Found her suffering from fainting spells and spitting up blood—result of an old chest infection. I remained all night, having a shake-down on the floor. In the morning I found the patient pretty comfortable and went to see a child who had been burned. I have quite a number of patients among civilians in surrounding country, which gives me exercise going to and fro over the snow.

December 25th. Rose at 7.45 a.m. Clear in morning, cloudy and cool during the day, stormy in evening. In forenoon I visited patients and wrote a letter to Dr. Burgess. Dinner was served up in good style. We had two rounds of beef—poultry was out of the question, a splendid plum pudding, drowned in brandy and then set fire to, liquors without end and several kinds. We also had other good things too innumerable to mention.

December 26th. No work was done to-day on account of the men not having recovered from their indulgence of the previous day.

December 28th. I visited sick and attended church parade. F. B. Allen and two dog teams left for Turtle Mountain. He had two half-breeds to drive the dog teams, four dogs in one and three in the other. They were taking out traps, etc., for the Indians. It took them a long time to get started but, after running a mile or two in one way for a dog and a mile or two in another direction for another, after a good deal of whipping and howling both from men and dogs, they got started. I went down the river three miles to see an Indian girl suffering from consumption. She was nearly dead. The family lived in a comfortable log house, but there were about twenty inmates lying around—most of them under the influence of "fire-water".

The rest of the Winter passed in routine work which the doctor found very tedious as his time was not sufficiently occupied, although Dr. Burgess' absence during most of the Winter gave him all the responsibility of the medical department. He bought a dog as companion which he called "Gyp"—a cross between a cocker and water spaniel—a most affectionate animal and almost human in intelligence. She always slept in his tent and, when it was cold, would snuggle down under his buffalo robe.

By April, 1874, when orders were given to accompany a party out to the field he was over-joyed, but much chagrined when the party was delayed by waiting for the return of another party. He says "I believe

I know every turn between Dufferin and Hudson's Bay store—also every turn in the river for that distance"—"but on April 22nd. we got away". We took with us six weeks' provisions— no butter and no cheese on the line this Summer, meat consists of one pound of bacon per day per man. The party was in charge of the sergeant-major and consisted of nine Royal Engineers, a cook, teamsters and myself. The sergeant-major and I had ponies to ride. The transport consisted of an ox team, four ponies and carts. We had one break down on the way, but reached the fifteen-mile point and camped at four o'clock. I took Gyp with me. The march made her very tired and she fretted a good deal and did not like the idea of sleeping in a tent and barked at every little noise—greatly to the annoyance of the sergeant-major who is a regular old granny. I pity his wife if he ever gets one. In spite of that I had a good sleep and awoke refreshed. I love camp life and am glad it has begun again. We managed to buy a few eggs—three dozen for \$1.25—from a farmer in the vicinity. He told me that he had raised five hundred and thirty bushels of wheat from twenty-six bushels of seed. It was a splendid sample. Fortunately game is plentiful, prairie chickens, ducks and geese.

April 23rd. Reached Grants' Point at noon. Camped there. Got hay for horses and oxen. We also got some eggs so that we are living pretty well. Remained here all next day as they are bridging a coulée. I went out with a gun but got nothing. Ducks, geese and cranes were flying over in the evening. Pembina River is breaking up.

April 26th. At seven we started for Pembina Depot. It was cloudy and snowing all afternoon. On the way the party mended the road through the swamp. A great many geese went North to-day. I went out with Sergeant to examine road farther ahead. Picked out new road to avoid some marshes.

April 28th. In the afternoon shifted camp to Dead Horse Creek. Met there an Indian—a half-breed, and traded some bacon for venison.

April 29th. The first warm day we have had. The grass begins to sprout. Frogs are singing lustily and the horrible mosquitoes are quite numerous.

April 30th. I rode out to Calf Mountain to see state of roads. Found it good. We shifted camp to coulée—just west of it in the afternoon.

May 1st. Sergeant-major and I went out five or six miles to see state of roads. Took guns with us and got a few prairie chickens. In the afternoon we pitched camp on opposite side of coulée, owing to a prairie fire coming down on us while we were taking dinner. One of the men came in and told the sergeant major the fire was very near. He got terribly excited, and, without finishing his meal, rushed out and

told them to strike camp. He then rushed back, began to strike out tent and asked me what in the h—ll I was doing. I told him I was rolling up my bed. He said "D—n the bed and help strike the tent". I laughed at him and went on as usual. In the course of an hour or so we were arranged on the opposite side. The fire did not come till dusk. It was really amusing to see the great fussy and fidgety sergeant-major fly around. He felt awfully disappointed at not seeing the fire arrive sooner.

May 2nd. In forenoon shifted camp to Pembina River. Found all the grass in the valley burnt. The water in the river was about five feet deep at the crossing.

May 12th. All the parties are now camped outside the barracks and the horses begin to pick the new grass. An ox train of twenty waggons is camped about a mile back. They are loaded with provisions for Woody Mountain under charge of depot man Osborne. The oxen are very poor and soon get played out. Lieut. Rowe arrived at ten to take charge of party. He brought out mail.

May 19th. Reached Turtle Mountain. Found Hill and Allen there all right. Saw also some bands of Sioux.

May 20th. Two scouts arrived from Dufferin with mail. We are coming across several very bad coulees to be bridged.

June 4th. In the forenoon I joined Capt. Featherstonhaugh's party. I am going to be with him during the Summer. He had my outfit with him—pretty much the same as last Summer, except that I have a riding horse in addition.

June 6th. The bridge being finished we are moving along. We started at twelve and went twelve miles along with Cutler then camped.

June 8th. It was so cold that overcoats and caps over ears came into requisition. We were on the march most of the time. I was walking and leading my horse. Arrived at west crossing of Souris at twelve. After lunch went shooting with Capt. Featherstonhaugh. Got two ducks. Gyp brought them out for us. This is the farthest west point I made last year.

June 9th. Left at six. Lunched at Rivière-du-Lac near Hill of Murdered Scout. Country previous to this was open rolling prairie—no timber to be seen. The hill received the above name from a rumour of a scout of the Assinabois Indians being murdered by the Sioux when they were at war some years ago. It appears some one has attempted to dig out the figure of a man on the hill. The attempt is moderate and there are footprints leading to and from it to the foot of the hill. It is about fifteen miles from the west crossing of the Souris. After travelling six miles through similar country we camped. Rivière-





Five on Souris River, Beaver Dam across it.

du-Lac empties into the Souris some distance South of the line. It is so called from a number of lakes being joined together by small streams. There were any amount of ducks on it, also geese and pelicans.

June 10th. Left this camp at 5.45 a.m. Passed a small spring at eight called St. Peter's Spring. Camped on Short Creek. This empties into the Souris. The country we travelled through was rolling prairie, having the Souris on our right. Two or three miles from here is what is called Roche Percé. They stand some distance from the stream, having holes pierced through the rock. It is principally sandstone. There appear to be a great many Indian engravings on them. Some of the rocks are twenty feet high and the holes in them would be eight by six feet downwards. In some of them the holes have the appearance of caves, leading away into the rocks.

June 11th. After going out four miles, Lieut. Rowe was thrown from his horse when at full speed. He struck his head and left side, remained unconscious for some time, after that delirious and complaining of pain in the head. Dr. Burgess and I remained with him nearly all day. I left at 4 p.m. Dr. Burgess is going to remain with him till he is able to bring him on in case everything is favorable. I went and joined the rest of the parties at Wood-End Depot, seven miles beyond Short Creek. It is on the Souris and is where the wood ends on that stream.

June 12th. Lieut. Rowe is much the same this morning. We started at six and went about twenty-five miles where the traders' road leaves the line and leads north to Woody Mountain. The country to-day was rolling prairie with the Souris still on our right. It appears to follow the traders' road to within sixty miles of Woody Mountain. We reached camp at four. Two antelopes made their appearance after dinner. About fifty made a charge on them, but failed in capturing them.

June 13th. Started at six. Capt. Anderson, Mr. Dawson, sergeant-major and parties, and ox train went by traders' road to Woody Mountain, the astronomical and surveying parties by the line. After about five miles we reached the edge of the coteau, where was one of Lieut. Galway's stations last year. We camped at his fifteen-mile point. The coteau is very rolling prairie. Hills with numerous swamps dotted among them—some of the hills have a very rocky appearance. The coteau has the appearance of a rough sea suddenly petrified.

June 14th. Clear and warm day, very *hot* in the valleys. We left at six, went twenty miles then camped at four, travelling through the coteau the whole day. We passed a chain of alkaline lakes. They are remarkable for being very shallow, entirely destitute of plants, grass,

etc., and have very muddy and soft banks. The alkali is sodium oxide.

June 15th. Left at 4.45 a.m. We soon were out of the coteau into rolling prairie. At three p.m. we came to a great canyon. It was two or three miles broad and two hundred or three hundred feet deep, very rough with a small alkaline creek at the bottom. A small quantity of wood was in the coulées. We camped a mile west of it.

June 16th. We came to a creek called "Pyramid Creek" from a pyramid about two hundred feet high near the crossing. This pyramid is about five yards north of the line. The water in the creek was cold and beautiful. The first good water we have had since leaving the Souris. We lunched at two rough hills called "Dragon Felts". In the afternoon the parties got separated. Lieut. Galway's and Ashe's party went by the British road. We went by the American road. We soon lost that and got on to a surveying trail into a rough country and had a great time. We had to go back once three miles. Another time we got stuck. We could not get the waggon out till unloaded and then only by aid of two teams and that after breaking several whipple trees, etc. At seven we came across the other parties, camped and having killed a wild ox. There were four of these but the rest got away.

June 17th. Started at six. Lunched at Porcupine Creek. Camped six miles beyond same. The country is rolling with gravelly soil and destitute of grass.

June 18th. Clear, cold and windy day—in fact too cold to ride. Left at six. Reached end of line at three. Ashe and party remained here to go on with work. Lieut. Galway and the rest of us went on six miles farther to Little Rocky River and camped there. This is a very nice country rolling and somewhat stoney with stream running south. Several antelope were seen.

June 19th. Lient. Galway and party went north-west up to Woody Mountain twenty-two miles north of line. After going about seven miles on the line we came to a very rough ridge about two miles across. It took us all the afternoon to cross it. The hills consist of clay drifts. Imbedded in them were found some bacculites and petrified bones of some very large animals. Iron ore also abounds. Camped on a stream in a broad valley.

June 20th. After following the valley we camped in last night till 11 a.m. we came to astronomical station four hundred and thirty-four miles from Pembina. Camped on the hill on the North side of the stream, just where a smaller stream cuts into it. I was not sorry to think that I should now have a few days' rest from the saddle, but this was not to be as next morning, while I was quietly enjoying a book—"A Strange Story," by Bulwer Lytton—two scouts arrived from Woody Mountain with a note from Lieut. Galway, stating that Sapper

McCammon had shot himself through the leg and that he wanted me to go to him as soon as possible. I started at once and camped with the commissariat teams on the rough ridge ten miles east of the station.

June 22nd. I rose at 4.30 and started at six. Kept on the road back to Rocky River and then took Lieut. Galway's road. It followed the river nearly all the way. The latter part of the road is dried up. Reached depot at Woody Mountain about two. Found that McCammon was shot in the back of the leg near the knee. Woody Mountain consists of hills quite destitute of woods but the latter abounds in the valleys and coulées. A beautiful stream of water runs north through it. There appears to be quite a settlement here of half-breeds, most of whom are away at present near Cyprus Hills hunting. Capt. Anderson and the rest arrived at Woody Mountain to-day. I dined with Capt. Anderson. He heard from Lieut. Rowe. In June Dr. Burgess had moved him to Wood-End Depot. He was pretty much the same.

June 23rd. Crompton and party started out to go one hundred and sixty miles out. Mr. East arrived from the East in the evening. Mr. Dawson and I went out hunting for flowers in the afternoon. We got three or four new kinds. I got a pair of moccasins from one of the settlers for visiting two sick children. An ox train of twenty-five waggons started west. Fish went along with it.

June 25th. Started back for Capt. Featherstonhaugh's party at ten. Went by trader's road that runs to Fort Benton, which passes two miles West of Capt. Featherstonhaugh's camp. Capt. Anderson, Mr. Dawson and parties went along. We went twenty miles during that time we went south eight miles and west about fifteen. Camped on bank of small stream of very cold water, having a little wood at that spot—fourteen miles north of line.

June 26th. Left at seven and reached Capt. Featherstonhaugh's camp at eleven—making an exchange of plants with Mr. Dawson in afternoon.

June 27th. Capt. Anderson's party left for Woody Mountain. In the afternoon I went out with Mr. Dawson on horse back botanizing and geologying. An American Scout was here. As he was going to be in communication with Fort Peck, I wrote a letter home.

July 2nd. We started at seven and went west about twelve miles and camped. The country was stoney and hilly. Little grass except in coulées and low places. In the evening we saw a comet in the North-west. It appears to be Caggias comet and an entirely new one. The tail extends upwards, not very large at present.

July 3rd. Starting at seven we reached White Mud River, on Frenchman's Creek at eleven—twenty miles from Capt. Featherstonhaugh's station. It is at the bottom of an immense canyon,—six miles



across and three hundred feet deep. Impossible to get waggons down into it. We camped on the edge of it. On our way we came across four wild oxen but did not get any of them. In the afternoon Mr. Dawson and I went down into the canyon on horseback. Went about half way across, examining the exposed surfaces and cliffs. We found ammonites and baculites, also oyster shells. They ran the line too near the edge of Canyon. Carvel and one of the men each shot an antelope.

July 4th. Mr. Dawson and I botanizing found quite a number of new plants. They ran the line to twenty-four mile point.

July 5th. Mr. Dawson left for the station camp. Capt. Featherstonhaugh left a portion of his party there. They finished running the line $25\frac{3}{4}$ miles. Capt. Gregory arrived to-day to commence work. His first station is at the west side of canyon, and of our line.

July 6th. We started at 8 a.m.—reached old camp at 5 p.m. Learned that Mr. Dawson and party had shot two of the oxen which we saw the other day so that we can enjoy the relish of fresh meat again. Word also came from Woody Mountain that Mr. Boswell had arrived. He brought word that Lieut. Rowe was somewhat better. He is light-headed. There appears to be a fracture in back of head. Nerve supplying lid of left eye is affected so that he has no power over it. The lid remains down all the time. Dr. Burgess has advised his going to New York or to England for further advice. Sergeant-major has returned to take him into Dufferin.

July 7th. Started at 5 a.m. for our next station. We took the traders' road for Woody Mountain for fifteen miles then branched off in a westerly direction. After going a few miles farther we descended about one hundred and fifty feet into a broad flat country traversed by several coulées. The descent was wooded.

July 8th. Started at 6 a.m. We struck the main road leading from Woody Mountain at 8.30—about twenty-five miles from the mountain I think. Camped at 5 p.m.

July 9th. Leaving at six, we reached the crossing of White Mud River at four p.m. The crossing is sixteen miles north of the line and about twenty miles west of where the river crosses the line. Found ox train there just starting west. Kennedy in charge of depot. There was a mail there but no letters. Saw in one of the papers that Prince Arthur has been made Duke of Connaught. We went five miles further in a northerly direction toward line. Country is rolling prairie with numerous water holes, covered with ducks. Ox train camped at same place.

July 10th. Reached line at nine near Lieut. Galway's station. He has gone on. We lunched at Cottonwood Coulée at Lieut. Galway's

sixteen-mile point on a swamp. Water scarce. In afternoon ox train left behind.

July 11th. Flies bad and grasshoppers in myriads. They fairly blackened the sky. Reached the end of Lieut. Galway's line at eight. Found Capt. Gregory and party there. We reached the neighborhood of our station about six. Camped on a lake a mile north of the line called Lac Des Marons No. II. No. I. could be seen about four miles north of where we camped last night. About two or three miles east of No. II. and about on line is a large salt lake. At this place we met in with some Assiniboine Indians. They accompanied us to camp. We gave them a present of bacon, flour and tea. They appeared to be very friendly. There were about thirty all mounted on very good ponies and appeared to be well armed. Some had Winchester repeaters or sixteen shooters. Saw some buffalo to-day.

July 12th. The Indians shifted their camp near ours. They had sixty tepees or wigwams. In the forenoon I visited these. Found the women as usual busy putting up tents, cleaning skins, etc. The Indians are making great slaughter amongst the geese on the lake as they are now not able to fly, having shed their feathers. In the afternoon we shifted camp three miles in a south-westerly direction nearer line. Camped on the edge of a small swamp. Got some buffalo meat to-day from a trader. The first I ever tasted. It is not unsimilar to beef. They use buffalo chips for fuel. Indians killed about thirty. Mr. Dawson called. He is on his way west.

July 15th. Saw several buffalo within one hundred yards. These are the first I have seen so close. The bulls are rough, ugly looking brutes. The comet Caggia's is getting quite large. But is rapidly approaching the sun and also the earth. In a few days we will not be able to see it as it will set before dark.

July 17th. Boswell and I visited the Indian camp and got some good photographs of them. Called at Lieut. Green's—American camp on the lake. He was out—running the line. Spent half an hour with Capt. Haines, Lieuts. Crowell, Walker and Murdoch and Dr. Lord, of the infantry.

July 21st. Left at 4.30. Went nine miles then breakfasted. Found Lieut. Galway's camp at end of his line—twenty-two miles from station. We lunched there. The country begins to look better. Yesterday and this morning it was something terrible, when you considered the heat dust, barrenness—cacti over the whole ground, no water! and the monotony of the scene! There was a large camp of half-breeds—hunters, near Galway's camp. They had twenty-four hundred horses. They had a priest with them. I went over and prescribed for two or three who were sick. We left at 4.30. Went almost south eight miles,



when we reached the ford of Milk River. Could not cross it on the line as the banks were perpendicular and a gorge one hundred and twenty feet deep. Found very little water at the ford and no wood. A depot was there under charge of Tompkins.

July 22nd. Left at 5.30 and went twenty-three miles without water to six hundred and nine miles from Pembina. At this point we turned north to our station four and three quarter miles. Found Capt. Anderson there. He had been locating the station. He soon left. We camped at the side of a large swamp about four miles from the river. The station is six hundred and eleven and a half mile point from Pembina. Saw a large herd of buffalo. The men killed a rattle snake. They are very numerous. Grass is poor but no cacti. Earth is white—also the water is white from this mud and quite thick. Hence "Milk River".

July 24th. Clear and cold. Capt. Cameron arrived during day bringing a mail. In the afternoon I had a ride out on horseback with Capt. Featherstonhaugh. Went east four miles to river. It is in a beautiful valley covered with timber. We ran a buffalo. Gyp is great on running them. She counts it great fun. A buffalo was shot by one of the men. I preserved the rattles of a rattle snake.

July 26th. Another mail arrived. It came by Dufferin. The dogs had great fun with a buffalo. It would dart at one then at another. Occasionally a bullet would go whizzing by. At night a very high wind—several tents went down. Large herd of buffalo went north.

July 29th. Shifted camp ten miles west, rolling prairie with one large coulée, banks exposed showing rocks, etc.

July 30th. Left with ambulance for the American camp at East Butte, about ten miles south of line and opposite our fourteen-mile point. Went for Garret, a depotman who has been down there with the surgeon. He has got a bad hand, likely to lose a portion of it. We camped at the end of our line twenty miles from our station. Rough country just on the verge of a broad flat and north of East Butte. They finished the line—there was a beautiful spring about half a mile from the end. Capt. Gregory was camped on a stream close by. Garret brought a mail.

July 31st. Rose at 6.30. Clear and warm day. Left at ten. Rather rough prairie especially the latter part when just North of the West Butte. About half way we met with Dawson and Boswell and the photographers. They were getting the photos of some dead Indians. They appear to be Crowe Indians killed last winter in a fight with the Piegiens. About twenty altogether were riddled with bullets and every one scalped. Every one had a gash in his side. Most of them had shirts on. The bodies were shrivelled up—but the skin was pretty

sound. We went nineteen miles and found the depot under charge of Fish. Found Capt. Anderson and Herchmer there. Galway's station was here but he had gone on. A beautiful stream runs by the depot. Capt. Cameron has gone on to end of line. East and Crompton are out that way also. A message left here by Capt. Cameron for Dr. Burgess. Capt. Ward and parties to return at once to Dufferin—also word that the Cree Indians are planning to intercept us on our way in, near Woody Mountain. All parties are to be back at Butte depot by Sept. 10th. and then ready to proceed to Dufferin.

August 1st. We left Butte depot at seven. After climbing to the top of a hill we got our first glimpse of the Rocky Mountains. The snow on them could be seen quite distinctly. We passed Lieut. Galway at his ten-mile point. We went twenty-two miles and camped on a small creek. The country was rough, being cut up with deep ravines for the few first miles. It was more rolling towards the latter part. We crossed two or three creeks and passed a lake or two—not much sign of buffalo.

August 2nd. Rose at five. Rather clear and warm. We left at 6.30 travelled over a hilly country, having the appearance of coteaux. In the afternoon got a good view of the Rockies. Saw very little of them north of the line, but a good view of them a good distance south. Near the line stands out very prominently a large square top peak mountain called Chief. We reached a beautiful stream of milky water at five. It is a branch of the Milk River and flows north. We camped on the west side and this forms Capt. Featherstonhaugh's fourth station six hundred and ninety-six miles west of Pembina. Still no buffalo to be seen. East and party arrived from the West. We saw some Blackfeet Indians. They appear to be very friendly. All they ask is that we wipe those whiskey traders out of existence, for they are robbing them—getting all their ponies, etc.

August 4th. Capt. Anderson, Mr. Dawson and parties arrived from east; in the evening I collected a few flowers.

August 5th. Lieut. Galway, Mr. Boswell and Ashe and parties arrived in the morning. They went on in the afternoon together with Capt. Anderson, Dawson, East and parties, also the ox train. Eeles in charge of goods. We got some luxuries such as canned peaches, damsons, whortleberries, strawberries, corn and tomatoes—quite a treat! for lately we have been living on bread, bacon and tea. My tent is standing directly on the line so that when I go to bed one half of me is in Canada, the other half in Uncle Sam's domain.

August 8th. Shifted camp seven miles to a small lake. Hilly ground. Saw about one hundred of the North Piegan Indians—very poorly clad. They were quite friendly and two or three had credentials.



They were to the effect that they were going north to join their tribe—"good Indians," etc. One of them had an English Testament with the name of John Sinclair in it. He also had a book of sermons in French.

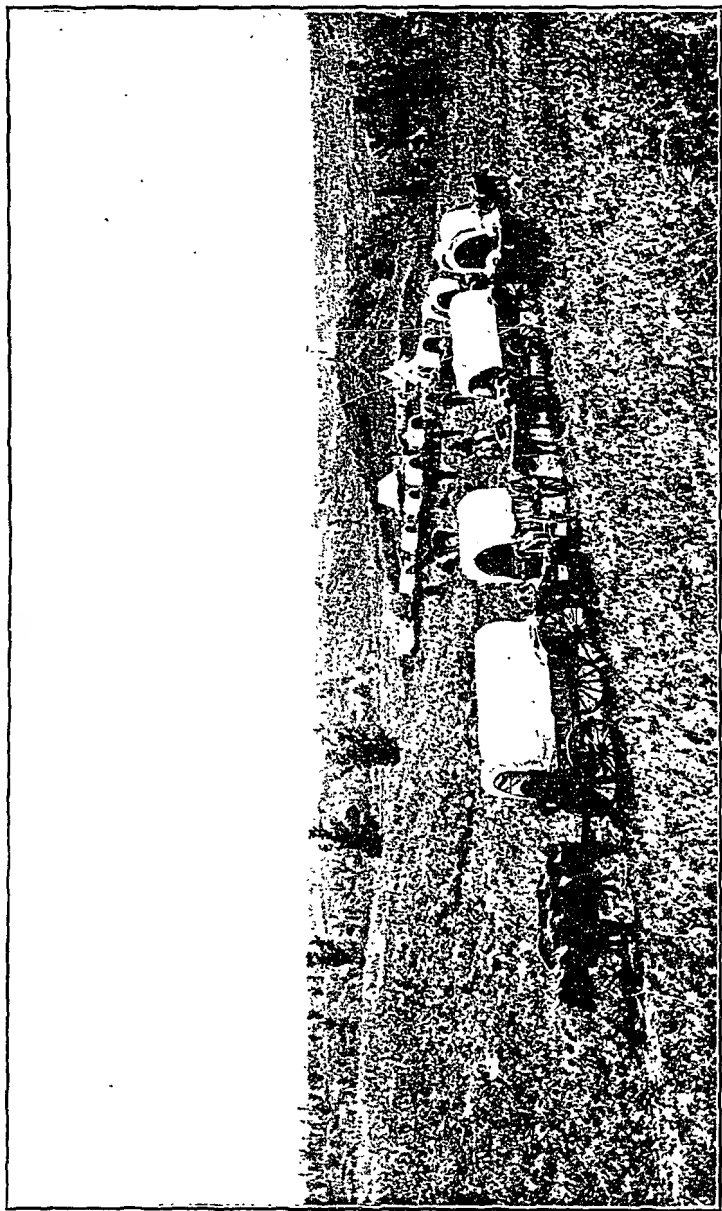
August 9th. Some of the American cavalry arrived in the morning, having heard that the Indians were collecting in this neighbourhood. On learning to the contrary they went back to the Buttes. At eleven we left. We went to the end of our tangent line—nineteen and a half miles from station—hilly country. There was a beautiful clear stream at the end of the line running north to Milky River. They finished the line. Splendid view of the mountains to-day.

August 10th. We left at seven and reached the main road at eight thirty. We travelled over a hilly country, very deep ravines. After going seventeen miles came to St. Mary's River. It rises from the mountains and is one continuous rapid. Plenty of trout in it, beautiful cold and clear water. Ashe and party were camped here. We went on eight miles further to depot and Lieut. Galway's station. We crossed two or three beautiful creeks after leaving St. Mary's River. There is a beautiful lake near depot, also plenty of wood. Found at depot Capt. Cameron, having just returned from the West. He failed to find the terminal line of the old commission. He reports seeing a grizzly bear. Boswell and Dawson were also at the depot. Capt. Anderson and scouts had gone on west. Owing to the cloudiness of the weather we did not get glimpse of the mountains the whole day. Soil appears to be very rich and the grass is splendid.

August 11th. We remained at depot all day. I visited the different camps and wrote letters. The Rocky Mountains still hidden from sight.

August 12th. Wet and cool morning. About ten it ceased raining and began to clear up. We left then, going north about four miles then north-west, west and finally south in order to get around Chief Mountain. After going eighteen miles we struck a branch of Belly River, seven miles north of line. Found Capt. Anderson and scouts here. We camped there also for the night. We found the country hilly and soft but managed to get the waggons through. Crossed three or four nice creeks. Belly River resembled St. Mary's River—the water rushing along in rapids over a splendid bed of stone. Had a good view of mountains at sunset. They do not appear very high from here. Some call this river the Cootanie—but I don't think it is.

August 13th. Clear and mild day—mosquitoes very bad. In the forenoon we shifted camp two miles further up stream—going to observe here with zenith telescope. We are about five miles north of line, camped on piece of prairie with river east of us, up against a very high hill and another to west of us, with the mountain about four miles away. Timber consists of poplar, tamarack and spruce. Could not get



Ox train leaving Long River Depot, 80 miles west of Red River and 10 miles north of Boundary Line. The train is on their way back to Dufferin. One man looks after three yoke of oxen. Each wagon carries about 1800 pounds

south further with waggons without a great deal of trouble. I spent the afternoon reading "Gun, Rod and Saddle" by "Ubaque" or Hardy of the Royal Artillery.

August 14th. Capt. Featherstonhaugh and I went out fishing for the day. Got quite a haul. The heaviest weighed three pounds. Found them very delicious when cooked. They have the taste of soles.

August 15th. In forenoon busy collecting and pressing flowers. Got a good number of new ones. In afternoon fishing and reading—"Gun, Rod and Saddle". In evening sitting by fire outside of tent reading "Tales of the Borders". Got "Globe", of July 16th., etc., etc. Ashe's party arrived. I lunched with him and then went fishing.

August 20th. At ten Boswell, Carvell and I started on horseback for Waterton Lake. Arrived there at one. To get there we had to go around the head of a mountain by Kootenay Trail and then go south between two ranges. Was about fifteen miles around and only seven by line. We found there all the Americans. Lunched with Capt. Haines. The lake extends from north to south twelve miles and is quite narrow. The mountains rise to quite a height on each side of it, broken here and there by passes. The Kootenay Trail and Pass is about six miles north of the line. The mountain appears to be composed of solid rock consisting mainly of free lime and slate stone. Some of the peaks are very sharp and ragged. Saw splendid cascade. Caught two fine trout at the bottom of it. Left at 6.30, reaching camp at 8.30.

August 21st. Capt. Anderson has returned from his expedition in search of terminal boundary post of the 1861 commission. *He found it.* To get to it he had to go by the Kootenay Trail till he struck the old boundary trail. This was ten miles west of the mound. They then worked by the boundary trail to the mound. They found it intact. It was a rough trip as the trail was almost obliterated by windfalls and undergrowth.

August 22nd.-23rd. Spent reading and fishing and attending to botanical specimens. Received large mail from home. Capt. Ward arrived in the evening. Lieut. Rowe is a great deal better and is at Woody Mountain. Dr. Burgess got out to second crossing of Milk River and then returned with ox train.

August 25th. I started in the forenoon up the river on horseback. Went up about ten miles to where the river passes between two high and precipitous banks. I found the road awfully rough. My horse was wet with sweat before I got through. I got back at two. When I went up stream I had to cross the stream several times owing to the swiftness of the current. Gyp was carried down but learned a new way of crossing, i.e., by catching hold of the horse's tail and being towed across in that way. She did this several times.

August 27th. In the afternoon we began our great journey east to Dufferin. Reached depot where we found Lieut. Galway and party. Capt. Ward and Boswell arrived from Waterton Lake in evening. Many of the men bought Indian ponies from the whiskey traders. The prices ranged from \$15.00 to \$50.00.

August 28th. Capt. Featherstonhaugh and Lieut. Galway's parties left at 7.45. They have gone on to put up their mounds. The rest of the parties will follow in three or four days. We reached the second branch of Milk River at 6.30 and camped. Capt. Ward came with us.

August 29th. Our party built two mounds. These mounds are made of stone. They are conical, ten feet in diameter at base and six feet high. They also put a small iron plate in a hole two feet deep and ten feet east of centre of mound. The plate is eight inches in diameter, shaped like a soup plate. It has around the edge "British and United States Boundary Line". In the centre is "North 49th. Latitude". Lieut. Galway's party went on to our four-mile point, i.e., where we met the Piegan on our way out.

September 1st. Reached Butte depot at 3.30. Took a farewell glimpse of the Rockies. Found most of the Americans there also Fish in charge of depot. Burpee was there. He left the mountains a few days ago in charge of a small party to help defend the depot as Fish thought he was going to "be gone through" by the Indians. Last night my supply of brandy and wine were freely used.

September 2nd. Left at six and went to end of Milk River. Found water scarce. A great number of buffalo seen. Several were killed.

September 3rd. Any amount of antelope and buffalo.

September 4th. Buffaloes to-day were as thick as bees. It was a splendid sight. The prairie was black with them. I believe you could see about half a million at once. A large herd came rushing over a hill and almost went through our train. The men opened fire and killed several. For fear they might make a rush on us during the night and stampede the horses, we corralled the waggons, put the tents close together and kept the horses inside. The howling of the wolves at night was almost deafening.

September 5th. Reached the half-breeds' camp lake end of Mr. Galway's line, and camped there. Half-breeds and Assinaboine Indians were there. The same ones we saw at our station at Lac des Marous. Went to the west fork, built mounds on the way. Two or three buffaloes seen. The last I saw.

September 18th. We have been gradually retracing our way putting in mounds as we go. The last was put in to-day. After that we

went north to the spring fourteen miles north of line. Camped there. Capt. Featherstonhaugh and I went out with our guns—got several prairie chickens.

September 19th. Reached Woody Mountain depot. Found the rest of the parties there. There was also a camp of Sioux Indians.

September 20th. Rose at 3.30. We all left at seven going by the trader's road one hundred and eighty three miles to Wood End. The country we went over is rolling and hilly. Went about twenty-four miles, plenty of water at the five, ten, fifteen-mile points and a spring where we camp. Also found a hay stack and wood. There is hay put up days' marches apart all the way to Dufferin. After camping I was reading the papers. Two of the scouts had a free fight. Their fists and arms were flying about pretty well for five minutes, occasionally their heels would be keeling up in the air.

September 21st. Left at six. Struck water at one, six, and fourteen-mile points. Lunched at the latter place. There was wood also at that place. The last we will see till we reach Wood End. Went ten miles further past two or three alkaline swamps that were dry. It being windy the dust from them resembled a drifting snow storm.

September 22nd. Left at six, travelled over a coteau, water in swamps some of them alkaline. We went twenty-two miles and camped at three-fifteen. After that Captain Featherstonhaugh and I went out shooting. Got a goose and several ducks. Any amount of geese and ducks to be seen.

September 24th. In the evening we had an Indian scare. While we were out at the Rocky Mountains word came that the Cree Indians were going to attack us somewhere between Woody Mountain and Wood End. So to-night a little after dusk Boswell reported that he saw a light some distance off to the west and he maintained that the light was waved about as though an Indian were signalling.

Owing to this report, watchmen were doubled everyone was ordered to have his rifle at his bedside, and seven rounds of ammunition were issued to each man. The night passed off without any disturbance.

September 25th. The same light that was seen last night was seen again tonight. It turned out to be the *setting of Venus*. Plenty of game. We have had several big bags. Have had to abandon two or three horses on the way.

October 3rd. Party of six went through Turtle Mountain by the lines to put in iron plates. Capt. Featherstonhaugh was in charge. Reached Turtle Depot at four. Saw some of my old Indian friends there.

October 4th. Ashe and I went out shooting in afternoon. In evening I was sitting by camp fire, listening to some good stories told by Capt. Anderson and Lieut. Galway.

October 6th. Reached Badger Creek at five and camped there. A mail arrived from Dufferin,—also some luxuries. I received several letters and papers. Riel has been again returned for Provencher by acclamation.

October 9th. Water very scarce at Duck Slough. Capt. Anderson camped there but Capt. Featherstonhaugh and Lieut. Galway went on to Grant's where we found water and camped at 7 p.m.

October 10th. Left at 8 a.m. Went to within nine miles of Dufferin and camped there at twelve. Got some buttermilk and eggs at Grant's—quite a treat! The rest arrived about four. I spent the evening with Ashe.

October 11th. Left at six and reached Dufferin at last at 9.30. Found it in about the same state as when I left it last Spring. In the evening went over to Emerson to see a sick woman. Emerson is the commencement of a town nearly opposite Dufferin. About twelve houses have gone up—all frame and some of good size. The inhabitants have come from Wisconsin, about five hundred came and formed a colony. Out at Point du Chien are about four hundred inhabitants.

October 12th. Heavy frost last night. Clear and cool day. After visiting my patients, was busy arranging the library. About twenty-five men were discharged to-day.

October 13th. Spent like yesterday in attending sick and arranging library. The scouts were discharged to-day.

October 14th. After visiting the sick, Mr. Dawson, Dr. Burgess and I were exchanging flowers which we had collected during the Summer.

October 16th. Smoky and mild day—regular Indian Summer and has been for the past two or three weeks. In forenoon visited the sick and in the afternoon Dr. Burgess and I priced the library books. Crompton and East went out to the field to put up iron posts along line facing the Province of Manitoba. They are to be put two miles apart. They are eight feet long—four feet in the ground—four above. They are four-sided, having on one side "Convention of London", on the other "October 23rd., 1818". They are hollow and put over an oak post. Boat went down to Winnipeg last night.

October 17th. In the forenoon sold nearly all the library—\$72.00 worth. Spent the afternoon in collecting the money for them and in taking a walk. Capt. Rowe and servant left by boat for England. He is a great deal better.

October 20th. I rose at midnight to catch the boat (Dakota) going down to Winnipeg. It did not leave till four. We passed Scratching River at four in the afternoon. There were on board Archbishop Tache, Judge McKeague and wife and others—fifty altogether. The scenery along the river was very monotonous. Here and there one would see a half-breed hut. It was a clear, mild day. We reached the rapids at dusk and lay over there for the night.

October 21st. Started at daybreak. We were not long in going over the rapids. As we passed two or three Roman Catholic Churches, the bells were ringing in honour of Bishop Tache. Fare from Dufferin to Winnipeg is four dollars—fifty cents for a meal. Reached Winnipeg at 6 p.m. I put up at the Exchange Hotel. Saw O'Donnell here. He is up trying to sell the horses. In the evening had a chat with him.

October 22nd. I spent the day in looking around the town. The Fort is situated in the angle formed by the Red and Assinaboine Rivers,—north side of latter, west of former. The town is situated on pretty high ground. There are some very good buildings, especially the government buildings, which have gone up this Summer. There are some very good stores. On the opposite bank of Red River is St. Boniface. Principally Roman Catholics there. They have their cathedral, convent, etc. Winnipeg was agitated by the trial of Lepine for the Scott murder during the rebellion of 1869-70. The town is growing very rapidly. Four years ago there were not over thirty buildings in the place. Now they have four thousand inhabitants, a city charter, mayor and aldermen, steam fire engine, artesian well, etc.

October 23rd. Left by boat at eleven. Mrs. Herchmer came on board. I was reading "The Caxtons", by Lytton, during the day and chatting with Mrs. Herchmer in evening. We had an insane woman on board who was being taken to the asylum at Kingston.

October 24th. Reached Dufferin at two. Capt. Featherstonhaugh, Lieut. Galway, Messrs. Dawson, Fish, Carvell, Eeles, Sergeant-Major Flower, Sergeant Edwards, and nearly all the sappers left to-day by boat. Sappers are going to Halifax under charge of Capt. Featherstonhaugh.

October 26th. Dr. Burgess and I were collecting material for the medical report to be sent in to the commissioner.

October 27th. Capt. Anderson and five sappers and Messrs. Bain, Burpee, Garrett, Sibbald, Sergeant Kay, left by boat for Ottawa. They were going there to finish their plans.

November 1st. Spent the evening reading Chief Justice Wood's address to jury on Lepine's case. It was splendid. The jury brought Lepine in guilty of wilful murder with a recommendation to mercy. He was sentenced to be hanged on January 29th., 1875.

November 4th. Have been occupied with visits to parents and filling medicine panniers for the past day or two. Am reading up medical and surgical books. To-day I rode out nine miles to Pembina to see Sergeant Woodworth, who is ill with typhoid. Got back at three. Mrs. Herchmer left by S.S. Selkirk for Winnipeg. Busy with patients and helping Dr. Burgess with his report.

November 10th. Roswell left to-day with forty-three horses for Toronto. The mounted police bought twenty more horses, giving \$170.00 apiece for them. I went out to Pembina to see Sergeant Woodworth. Found him very low. Spent evening writing report for Dr. Burgess.

November 13th. Finished report. Following is an extract from report concerning Medical Staff:—

"To my assistant, Dr. Millman, great credit is due for his earnest and constant attention to those under his care. A more able and indefatigable co-operator could not be desired"—(Rather strongly drawn, I fancy).

November 15th. Capt. Ward, Dr. Burgess, Messrs. King, Ashe and Coster left for Ontario. They started in one of the ambulances, took their luggage in a water waggon. They were all in high spirits at getting away from this solitary place. In the afternoon I had a walk to the Hudson's Bay store and in the evening was reading "Canada Lancet".

November 16th. Snowing all night also during day, quite cold. In the forenoon I shifted over to the front room in the quarters, Capt. Anderson's old room. I got the room fixed up pretty comfortably, carpet on floor, window curtains, a good stove, etc. The commissioner has increased my salary counting from to-day.

November 17th. and 18th. Twenty to twenty-three degrees below zero. Spending most of spare time reading surgery, etc. The river is frozen over. Herchmer left for Winnipeg. We are going to grub in the old instrument room.

November 20th. Nixon, supply agent of mounted police arrived, also Quarter-Master Mill, of Northwest Mounted Police.

November 29th. Twenty-nine degrees below zero. Another batch of mounted police arrived under command of Mr. Dickens, son of the famous novelist. I spent the evening talking with him and Capt. Walker.

November 30th. I went six miles down the river to attend one of the Mrs. Goselins. In the afternoon attended sick of mounted police and read papers.

December 14th. During last two weeks have spent all spare time reading surgery, etc. This afternoon visited Woodworth, who is improving. In evening attended a political meeting at Emerson. It was called to choose an English speaking candidate for the coming local election. Mr. Almon, of Dufferin, was chosen. One Martin is his opponent.

December 26th. In the morning visited Old Dakota. The cart and horses have been handed over to the mounted police. The commission is to be broken. Capt. Cameron told me to-day my services would be no longer required.

December 27. In the forenoon packed one of my trunks. In the afternoon called on Capt. Cameron. He was not well. After that called on surgeon at American Fort and consulted him. Had tea with Capt. Cameron and went to quarters at eight.

December 29th. Twenty-seven below zero. I finished packing and called on Mrs. Bradley to say good-bye. After tea left Dufferin and went to Pembina. Remained at Potter's Hotel all night.

December 30th. Rose at 3.30 a.m. Left by stage at 4.30 a.m., reached Grand Forks at eight. We had four passengers. It was very cold and we had to cover up well to keep warm. After tea I visited Capt. Grey's child at Grand Fork.

December 31st. Rose at 2.30. Clear, cold morning, later cloudy and blustering. Left at three, did not reach Moorehead till two hours of the year 1875 had gone by. It was owing to some misunderstanding between one of the passengers and the messenger Van Ransellar. Heartily glad that staging is over.

I reached home on January 5th. Found the people all well, and thus ended my trip to the Great North-west, which I am not sorry I undertook. I spent many a useful and pleasant hour during that time.

NOTE.—Dr. Millman continued his botanical collection many years after his return and, on his death in 1921, the collection, consisting of over 3,000 specimens—entirely Canadian flora, was presented to the University of Toronto.

BURGESS, DR. T. J. W.—Born in Toronto, educated U.C.C. and University of Toronto. In charge of the Medical Department throughout the Commission. Later made a study of mental disease and became superintendent of various asylums, was also interested in botany and wrote on the flora found near the boundary line.

DAWSON, G. M.—A distinguished Canadian, son of Sir William Dawson. On this Commission he prepared an elaborate report with plates and maps on the Geology of the country near the Boundary Line and its resources. In 1892, as one of the British Commissioners in the Behring Sea Arbitration, spent the Summer in that region studying the seal. For his services he was made C.M.G. Later was head of Department of Dominion Geological Survey. Died in 1901.

HERCHMER, LAWRENCE WILLIAM—After service with the Army in India, came to Canada. In 1878, was appointed Inspector of Indian Agencies in the then N.W. Territories. In 1886, was appointed Commissioner of the N.W. Mounted Police. In the Boer War was given the command of the unit who volunteered from that body, but after a very short interval on the field, he retired. Died in Vancouver, 1915.

KING, WM. F.—Born in England, educated in Canada. On this Commission he served as computer and sub-assistant astronomer. Later he was employed on Dominion Land Surveys in the N.W.T. In 1886, he became Chief Astronomer of the Department of the Interior and in 1893, he was appointed a Commissioner on the boundary between Canada and Alaska and between New Brunswick and Maine in Passamaquoddy Bay.